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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/649,737

08/28/2003

Hisayuki Kato

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7590

02/03/2005

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EXAMINER

PRENTY, MARK V

ART UNIT

PAPER NUMBER

2822

DATE MAILED: 02/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/649,737

Applicant(s)

KATO, HISAYUKI

Examiner

MARK V. PRENTY

Art Unit

2822

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on December 23, 2004, and December 28, 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 4-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-8 is/are allowed.
- 6) ☒ Claim(s) 1, 4 and 9-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

This Office Action is in response to the amendment filed on December 23, 2004, and the supplemental response filed on December 28, 2004.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Lee et al. (United States Patent 6,175,145 – hereafter Lee – already of record).

With respect to independent claim 1, Lee discloses (see the entire reference, including the Figs. 5A-5F disclosure, for example) a semiconductor device formed on a substrate 1, comprising: an interconnection line 30 formed on the substrate and provided to structure a prescribed circuit; and a fuse 50 incorporated into said interconnection line, said fuse and a connection portion of said interconnection line electrically connected to the fuse being formed of different metals (i.e., copper and aluminum, respectively – see column 3, lines 40-46, and column 4, lines 42-44), wherein an oxidation speed of the (copper) metal forming said fuse is faster than an oxidation speed of the (aluminum) metal forming the connection portion of said interconnection line; said fuse 50 is formed of a copper metal (again, see column 3, lines 40-46); the connection portion of said interconnection line 30 is formed of an aluminum metal (again, see column 4, lines 42-44); and said copper fuse is flat so that focusing can be easily obtained. Claim 1 is thus rejected under 35 U.S.C. 102(b) as being anticipated by Lee.

Claim 4 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Lee et al. (United States Patent 6,175,145 – hereafter Lee – already of record).

Claim 4 depends on claim 1. The explanation of the above rejection of claim 1 under 35 U.S.C. 102(b) as being anticipated by Lee is hereby incorporated by reference into this rejection of claim 4 under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Lee.

Any difference, therefore, between claim 4 and Lee is a process difference. Lee's semiconductor device appears to be the same as or similar to the claimed device, particularly with respect to their copper fuses being coplanar with an insulating layer. Claim 4 is thus rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Lee. See MPEP 2113.

Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Lee et al. (United States Patent 6,175,145 – hereafter Lee – already of record) together with Delpech et al. (United States Patent 6,271,574 – hereafter Delpech – already of record).

Claims 9-11 depend on independent claim 1. The explanation of the above rejection of independent claim 1 under 35 U.S.C. 102(b) as being anticipated by Lee is hereby incorporated by reference into this rejection of dependent claims 9-11 under 35 U.S.C. 103(a) as being unpatentable over Lee together with Delpech.

The difference between claim 9 and Lee is claim 9's fuse is formed from at least two portions different in width.

Delpech teaches that forming a fuse from at least two portions different in width increases its efficiency (see the entire patent, particularly the Fig. 3 disclosure).

It would have been obvious to one skilled in this art to form Lee's fuse from at least two portions different in width in order to increase its efficiency as taught by Delpech.

Claim 9 is thus rejected under 35 U.S.C. 103(a) as being unpatentable over Lee together with Delpech.

The difference between claim 10 and Lee is claim 10's fuse has a width gradually reduced from an end toward an intermediate portion of said fuse.

Delpech teaches that forming a fuse such that its width is gradually reduced from an end toward an intermediate portion increases its efficiency (see the entire patent, particularly the Fig. 3 disclosure).

It would have been obvious to one skilled in this art to form Lee's fuse such that its width is gradually reduced from an end toward an intermediate portion in order to increase its efficiency as taught by Delpech.

Claim 10 is thus rejected under 35 U.S.C. 103(a) as being unpatentable over Lee together with Delpech.

The difference between claim 11 and Lee is claim 11's fuse has at least three different widths from the end toward the intermediate portion.

Delpech teaches that forming a fuse such that it has at least three different widths from the end toward the intermediate portion increases its efficiency (see the entire patent, particularly the Fig. 3 disclosure).

It would have been obvious to one skilled in this art to form Lee's fuse such that it has at least three different widths from the end toward the intermediate portion in order to increase its efficiency as taught by Delpech.

Claim 11 is thus rejected under 35 U.S.C. 103(a) as being unpatentable over Lee together with Delpech.

Claims 5-8 are allowable over the prior art of record.

The applicant's argument with respect to the maintained rejection of independent claim 1 under 35 U.S.C. 102(b) as being anticipated by Lee is without merit. Specifically, contrary to the applicant's argument in the second paragraph on page 6 of its December 23, 2004, response, Lee's interconnection line 30 (Fig. 5), including the portion electrically connected to fuse 50, is formed of an aluminum metal, as clearly explained in the rejection (again, see Lee at column 4, lines 42-44). The applicant's reliance on Lee's element 20 is misplaced because the rejection does not even mention Lee's element 20, let alone read claim 1's connection portion thereon. In any event, the applicant's argument is without merit because Lee's interconnection line 30, including the portion electrically connected to fuse 50, is formed of an aluminum metal (again, see column 4, lines 42-44).


The applicant relies on its incorrect argument with respect to independent claim 1 as its argument with respect to the rejections of claim 1's dependent claims 4 and 9-11, so those rejections are also maintained.

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Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Registered practitioners can telephone the examiner at (571) 272-1843. Any voicemail message left for the examiner must include the name and registration number of the registered practitioner calling, and the Application/Control (Serial) Number. Technology Center 2800's general telephone number is (571) 272-2800.

  
Mark V. Prenty  
Primary Examiner